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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/480,409	01/11/2000	ANANTH DODABALAPUR	19-2-16-18	4284

28221 7590 10/27/2003

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EXAMINER

NGUYEN, TUAN M

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/480,409

Applicant(s)

DODABALAPUR ET AL.

Examiner

Tuan M Nguyen

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding to claims 1 and 19, the claims are vague and indefinite, for example, the recite “an article comprising...” the claims do not clearly define what is “an article”, that also do not limit the invention which render the claims confusing, vague and indefinite. Furthermore claim 19 recites “an article comprising a two-dimensional photonic crystal coupler integrated with at least one one-dimensional photonic crystal laser. It is not clear how a two-dimensional photonic crystal coupler integrated with at least in one-dimensional photonic crystal laser. Claim 19 also recites “the grating of the one-dimensional photonic crystal laser function as a mirror to define a resonant cavity coupler. It is not clear how is the grating of the one-dimensional photo crystal laser is function as a mirror and how it’s define a resonant cavity coupler which render the claims confusing, vague and indefinite.

Regarding to claim 20, the claim recite a method of making a two dimensional photonic crystal coupler integrated with a one-dimensional laser comprising coating, applying, patterning, etching, removing and covering. It is not clear and not really shows the step of making a two-

Art Unit: 2828

dimensional photonic crystal coupler integrated with a one-dimensional laser in drawings or anywhere in the specification, which render the claim confusing, vague and indefinite.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-20 are rejected under 35 U.S.C. 102(a) as being anticipated by Butler et al (US patent 6,487,328).

With respect to claims 1 and 19, Butler et al disclose a single wavelength semiconductor laser with grating-assisted dielectric waveguide coupler comprising a core region (31) disposed between two cladding region (27, 32) in which the core region receives light from at least one first device and outputs light to at least one second device, and the core region (31) having a grating (18), note cols. 3-4, see figures 1-2.

With respect to claim 2-18, Butler et al discloses cladding region (22,17) comprises SiO<sub>2</sub>, and the laser is formed from either group III-V compound materials or from group II-VI compound material, note col. 1 line 15 to col. 4 line 17, see figures 1-2.

With respect to claim 20, Butler et al discloses a method of making a two dimensional photonic crystal coupler integrated with a one dimensional laser comprising coating a silicon substrate (16) with layer SiO<sub>2</sub> and a first layer of photoresist on the SiO<sub>2</sub>, note col. 1 line 15 to col. 4 line 67.

### **Response to Amendment**

3. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

### **Citation Of The Pertinent References**

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Congdon et al (US patent 6,064,783) discloses integrated laser and coupled waveguide.

The patent to Congdon et al (US patent 5,673,284) discloses integrated laser and coupled waveguide.

The patent to Okada et al (US patent 5,410,622) discloses optical integrated circuit having light detector.

The patent to Sakata et al (US patent 5,220,573) discloses optical apparatus using wavelength selective photocoupler.

The patent to Mito et al (US patent 4,318,058) discloses semiconductor diode laser array.

The patent to Puech et al (US patent 4,286,232) discloses laser with distributed reflector.

### ***Communication Information***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan M Nguyen whose telephone number is (703) 306-0247.

The examiner can normally be reached on 8am to 5pm.

Art Unit: 2828

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.



Paul Ip  
SPE  
Art unit 2828

TMN  
October 20, 2003